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Frank Dunkle—Director of the Montana Fish and Game Department.

Director's Column

Water has been a much discussed subject in Montana and throughout the United States. The discussions, of course, cover everything from drought to floods. All too often there is no discussion of water when its needs and supply balance each other.

All eyes of the western United States are focused on Montana when a water discussion comes into view. Montana is the roof and the starting point of three major water courses—the Columbia, Mississippi, and Missouri drainages—and the Hudson Bay drainage has its very trickling beginning in Montana.

There is a timeworn adage, "water, water everywhere and not a drop to drink," which, to some people's thinking, could be changed to, "water, water everywhere and not a drop to use."

Let's keep clearly in our minds that any discussion of water should include two important questions: (1) How can this water best benefit Montana? and (2) What effects could this water have on other areas of the United States?

Montana's use of water has always been considered in regard to agricultural benefits, or the water has been thought of as something to control for power or to prevent floods. Let's not forget the impact that water can have on recreational development. A free-flowing stream in Montana, in a few years, may be as important to the state as any other given resource we can now consider.

When a water discussion arises, you should look at both sides and give serious consideration to the impacts of any so-called development or lack of development, as well as what it can mean to us in Montana, before you make up your mind.

"USE IT OR LOSE IT"—HOW?

The most common phrase floating around Montana lately is "We must use our water or we'll lose it." It's usually received with a nod of the head and, "That's right!"

Most of the people passing the saying along don't have the vaguest idea what it means or what started it; it just sounds right. Somewhere in the back of their minds is a picture of millions of suntanned Arizonans and Californians with a thirsty gleam in their eyes, figuring out schemes to steal our water—every last drop of it. So it doesn't sound good, and something has to be done to keep our water here.

With this kind of thinking, or lack of thinking, the vested interest groups have a pretty fertile atmosphere to foster their own plans—provided these plans look like they will "keep Montana water for Montana."

Before accepting proposed solutions to Montana's future water problems, it would be well for the people of this state to really look into the problems. The best place to start would be to examine and define the words "use" and "lose." Does "using" our water mean putting every drop of it into holes in the ground, or spreading every last bit of it out on the ground to grow hay, or making Montana into one big lake? Some interests would go no further in their thinking. Others are concerned with the growing needs of a growing population here in Montana and want to insure they have enough water for those needs—domestic, industrial, recreational. But even these thinkers haven't come up with how much water will be needed or what to do now to provide for those needs.

Some people think that recreational use of water (fishing, boating, esthetics) has as high value as any other use. Many of these people feel that a beautiful, clean, natural river can provide higher quality recreation than a man-made, periodically dried-up reservoir. But they haven't yet figured out how to reconcile this kind of use with the tremendous demands by advocates of more irrigation, and more hydroelectric power—especially when the dam builders keep saying, "We must use our water or we'll lose it,"—implying that irrigation and power are the only ways to use water.

The second word—"lose"—needs to be assessed. Does it mean we'll have the use of no more water for irrigation; or that we'll have no water to drink? How are we going to lose it?—by big canals leading south from the Big Hole, the Gallatin Valley and from Yellowstone Park?

There is no disputing the fact that the water-short parts of the country look with envy on the water-a-plenty places. The people that use this threat to their own vested advantage are doing Montana grave harm. The general public, if it gets duped into short-sighted solutions, or worse yet if it does nothing, is guilty of worse harm.

The responsibility of Montana citizens is to find out what tune is being played by the band before they jump onto the wagon, and also, who is the conductor.

Part of Montana Will Have Special Teal Season September 18 – September 26

The Central Flyway portion of Montana will be opened to a special teal season from September 18 through September 26, 1966. This includes Blaine, Fergus, Judith Basin, Wheatland, Sweet Grass, Stillwater and Carbon counties and all counties east of these.

Scattergunners who wish to take part in the hunt can get a special permit issued free of charge from the Montana Fish and Game Department in Helena. Written applications stating the applicant's name and address will be accepted through August 18, 1966.

In addition to the special permit, each hunter participating in the special season must have a 1966 Montana game bird license. Persons 16 years of age or older must also have the 1966 Federal duck stamp. Shooting will begin at sunrise September 18. The special season will close at sunset, September 26, 1966.

Experienced teal hunters are quick to admit that it's a real challenge to pick one of these little missiles out of the air. Rapidly pulsating wings push the small bird through the sky at high speeds and an inept hunter is apt to be left with nothing but empty shotgun shells for his efforts.

Hunters may take a daily limit of four teal and after the opening day, may have eight in possession. The limits can be made up of a single species or a combination of blue-winged, green-winged, and cinnamon teal.

Means of taking will be limited to the same weapons as those used during regular waterfowl seasons. This limits hunters to long bow and arrow or shotgun not larger than ten gauge fired from the shoulder and incapable of holding more than three shells. Other regular waterfowl season regulations also apply.

All Central and Mississippi flyway states were invited to join the early autumn teal season which began in 1965. Twenty states took part in the hunt last year but Montana did not participate. The main objective of the special season is to determine if blue-winged teal can offer more recreational hunting than in the past. Blue-wings are good producers when water and weather conditions are right. They migrate early in the fall and consequently don't get much hunting pressure, particularly in years with later waterfowl seasons.

Since a relatively small portion of the blue-winged teal population is taken by hunters, the natural mortality of these birds is quite high, judging from annual counts made by the Fish and Wildlife Service, Bureau of Sports Fisheries and Wildlife. It is hoped that the special seasons will show if a greater kill by hunters will take birds that would die anyway, or whether it would add to the overall mortality rate and how much.

Fish and game departments and the Fish and Wildlife Service will be looking for other information also. It is suspected that adult male blue-wings may migrate at different times than adult females and immatures. Thus, a special teal season in September may harvest one age and/or sex group more than another. The kill of green-winged and cinnamon teal is expected to be small because green-wings are late migrants and cinnamon teal are uncommon in the Central and Mississippi flyways.

Efforts will also be made to determine how well hunters can distinguish teal from other waterfowl. The identification of green and blue-wings is rather difficult, so the Fish and Game Department is attempting to get colored pictures of the birds for each hunter who sends in for a special permit. It would also be advantageous for hunters to pick up a waterfowl identification book and test their abilities, in the field, at picking out these ducks as they flush or fly by.

The Fish and Wildlife Service will conduct two special surveys during the season, requesting help from hunters selected at random. A wing collection survey will provide information on species, age, and sex of the birds bagged. A mail questionnaire survey will help answer such questions as hunter effort and total kill by time periods.

WHAT YOU SHOULD KNOW ABOUT RABIES

A growing incidence of rabies in skunks throughout southeastern Montana has prompted the fish and game department director, Frank Dunkle, to appoint a coordinator for the rabies control program in Montana. Bill Maloit, former district supervisor for fish and game district seven, was named by Dunkle to fill the post for a period of one year. The job will call for coordinating the rabies control program among several state and federal agencies and counties involved.

The rabies control supervisor will be stationed in Miles City within the general area where most of Montana's rabies cases have shown up.

So far this year, 14 cases of rabies have been detected in Montana skunks. Nearly all of the cases have been in southeastern Montana, though four have shown up in Valley county. During 1965, four rabid skunks were discovered in the state and one cow was found to be infected. Undoubtedly, the disease has spread into Montana from neighboring states of South and North Dakota which have experienced rabies for several years now, though not in epidemic proportions. The gradual westward spread of the disease was not checked before finding its way into our state.

There is probably no more feared disease in the United States than rabies, and though the disease is admittedly terrible, twisted stories and misinformation have blown the malady clear out of proportion in the minds of many people.

Rabies is a virus disease of mammals which is transmitted to other

mammals, including humans, in contaminated saliva generally by bites from rabid animals. After a rather lengthy incubation period, symptoms develop and death follows. Unlike most other diseases, symptoms appear late in the infection. When symptoms appear, the disease has already advanced to the point where recovery is not possible and death is imminent.

Rabies assumes one of three forms. According to a North Dakota Fish and Game Department's disease research biologist, Steve Richards, these forms are called "dumb," "furious," and "intermediate." Dumb rabies is characterized by paralysis rather than by symptoms of irritation. The infected animals are listless and show little interest in their surroundings. This period of dullness is followed by tremors, paralysis and prostration. The animals usually lie quietly for up to five days before dying.

The second, or furious type, is better known because of the spectacular behavior of stricken animals. There are three stages in this form. The first is a period of change in normal disposition. For example, the animals may become over-friendly or be apathetic to friendliness, restless, very quiet, or troubled. In the second stage they become excitable, extremely agressive and will snap repeatedly at any object in their paths. They may even suffer self-inflicted bites during this stage of the disease. A perverted appetite may cause them to eat wood, stones, dirt, etc. Very often they will travel long distances. The third state is characterized by muscular paralysis, a change in voice, possible salivation or frothing at the mouth and convulsions. Lack of coordination, paralysis and death follow soon. The duration of these three stages varies between four to seven days, although infected animals have been known to live as long as 17 days. The affected animals may return to normal for a few hours to two days between stages. These various behavior patterns may become extremely important in the accurate posting of animals suspected of being rabid.

The third or intermediate type is described by the North Dakota biologist as lacking the lethargic condition of **dumb** rabies and the second stage of irritability, fury or excitement evident in the **furious** type. Instead of these characteristics, infected animals display a purely defensive nature in which they will retreat when attacked and will not bite unless severely pressed. Skunks with this form of rabies will expel scent and foxes will use their tails for protection.

The question comes to mind then, just how does one determine if an animal has rabies? In the case of domestic animals, any unusual behavior should be watched and the animals in question confined if possible. This period of quarantine should be for 20 days. If behavior continues to indicate rabies during this time, a veterinarian should be consulted. If the quarantined animals have rabies, they will die within a 20-day period.

There are three diagnostic tests or procedures to be applied to rabies-suspect animals. The most dependable and most recently developed is the Fluorescent Antibody Test which involves the addition of a fluorescent dye to a serum. When the mixture of the dye and serum is applied to brain tissue of a rabid animal it results in a reaction which is visible when viewed under a microscope. The second diagnostic procedure is the use of Seller's stain applied to brain tissue to display the presence of Negri bodies which are cellular inclusion bodies present in brain tissue from rabies victims. In early rabies cases these bodies are often times not present and in some rabid wild animals they may not develop. In this instance this test would be of little value in determining whether the animal has rabies or not.

Another examination involving the use of mice is used in the case where a human bite has occurred and particularly where the Fluorescent Antibody test or Seller's stain test are not conclusive.

In this test, brain tissue or salivary gland taken from the suspected animals is injected into the brain of mice. If the tissue is infected, the mice will usually develop rabies within seven to 30 days.

Some animal species do not exhibit Negri bodies as commonly as others, so the mouse test is used in laboratory diagnosis. Specifically, animals which may not exhibit Negri bodies are red fox, coyote, badgers and raccoons. Skunks exhibit them quite often, but not always.

Obviously, not all animals suspected of being rabid can be quarantined or confined for observation. If it is necessary, then, to kill an animal suspected to be rabid **don't** shoot it in the head. This would destroy the brain tissue and make diagnosis most difficult. The entire head should be removed and sent to the Livestock Sanitary Board's diagnostic laboratory in Bozeman as described later in this article.

Persons are vulnerable to being bitten by pets. It is therefore highly desirable, if not imperative, that all dogs and cats and other mammalian pets be vaccinated against rabies. If rabies is suspected, pets should be quarantined and observed as described above. Humans bitten by animals should, of course, consult a physician. If at all possible, the actions of the animal involved should be observed and a detailed report of its actions should be sent to the diagnostic laboratory along with the head of any animal.

The correct description of the animal's behavior becomes important in accurate diagnosis. In cattle, for instance, bellowing, slobbering, lameness, and paralysis of the throat indicate that rabies may be present. A skunk that attacks furiously, biting any moving object and not scenting is apt to be rabid. However, if it only appears sick, blind or paralyzed, it might be rabies, distemper, listeriosis, parsitic worms, or some other disease.

Certainly there is no need for any panic on the part of Montanans. Instead, a watchful eye should be kept for any unusual behavior on the part of both domestic and wild animals. In case rabies is suspected, confine the animal in question for quarantine and observation if possible. If the animal must be killed shoot it through the heart, remove the head and send it to the Livestock Sanitary Board's diagnostic laboratory, Bozeman, Montana. Place the head in a plastic bag, pack well with ice (do **not** freeze) and ship it in a water-tight container **along with any observation noted regarding the animal's behavior** via the fastest manner available.

Veterinarians have now been instructed by the State Veterinarian that they may forward rabies suspect heads collect to the Diagnostic Laboratory. These must be heads deemed by the veterinarian to be of diagnostic importance and value and not just an answer for the curious person. Veterinarians have the regular form for submitting the detailed information along with the specimen.

Caution should be used when handling the head to prevent any

of the animal's saliva from coming in contact with open cuts or wounds.

Both the behavior pattern and a laboratory diagnosis are important in determining if a suspected animal is rabid. Therefore, a letter should be attached to any specimen sent in for diagnosis and should contain the following information. 1. A description of the behavior of the animal doing the biting; 2. The animals that have been bitten. In case of humans, names, ages and addresses are needed; 3. Location of bites on body; 4. Whether there has been a previous vaccination; 5. Date that exposure (bite) took place; 6. Names and addresses of owners, physicians, veterinarians that are involved and; 7. Any other information of circumstances surrounding exposure.

The greatest danger of humans contacting rabies is from bites of infected pets. If pets, particularly dogs and cats are vaccinated against rabies, this threat is greatly reduced. A veterinarian will be glad to furnish information about such vaccinations.

Any information relative to rabies or suspected rabies, particularly in wild animals should be sent to the rabies control coordinator, Fish and Game Department Headquarters, Miles City or to the state veterinarian, Livestock Sanitary Board, Helena. If rabies is suspected in dogs, cats or other domestic animals consult your veterinarian.

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